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cause of the urgency of other work it has, up to the present time, been almost neglected.

Because of the great cost involved, the progress of detailed surveys in southeastern Alaska must of necessity be rather slow; but it will be possible within the course of a few seasons to complete the reconnaissance mapping. This, in conjunction with a preliminary study of the occurrence and association of the ore-bearing horizons, should yield results of value to the prospectors.

The heavy capital which is being invested in the oil fields on the Pacific coast of Alaska singles this out also as a region needing further attention. Hand in hand can go a study of the coal fields of this district, which give promise of large commercial importance.

The above suggestions do not by any means exhaust the possibilities for effective geologic and topographic work, but will indicate the lines along which there is the most pressing demand.

GEOGRAPHICAL RECORD.

AMERICAN GEOGRAPHICAL SOCIETY.

TRANSACTIONS OF THE SOCIETY, NOVEMBER–DECEMBER, 1904.—A Regular Meeting of the Society was held at Mendelssohn Hall, No. 119 West Fortieth Street, on Tuesday, November 22, 1904, at 8.30 o'clock P.M.

President Peary in the chair.

The following persons, recommended by the Council, were elected Fellows:

P. J. Goodhart.
George A. Plimpton.
Mrs. Roswell D. Hitchcock.
Grant Squires.
Frank Benedict Cleland.
Mort J. Kaufman.
John D. W. Sterry.
John F. Doyle.
Sidney Bradford.
H. C. Chatfield-Taylor.
George S. Brewster.
Francis J. Arend.
George Coe Graves.
Samuel M. Bain.
William T. Gade.
Robert Garrett.
Carl A. Hansman.
A. G. Baker.
Otto Quelle.
F. W. Bruggerhof.
Basil H. Soulsby.
Andrew Carnegie.
William L. Brown.
Ernest W. Bowditch.
Daniel Moreau Barringer.
Gen. Francis Fessenden.
Alfred G. Hoe.
C. Heurich.
Durbin Horne.
William Gammell.
Bernard G. Gunther.
Charles J. Glidden.
C. F. Adae.
Anthony Dey.
Charles W. Iden.

The President expressed his gratification at the number of new Fellows elected, and hoped that all would lend their aid to add new names to the list.

Mr. Oscar T. Crosby was then introduced and addressed the Society on his journey in Turkestan and a Corner of Tibet.

Stereopticon views were shown.

On motion, the Society adjourned.

A Regular Meeting of the Society was held at Mendelssohn Hall, No. 119 West Fortieth Street, on Tuesday, December 20, 1904, at 8.30 o'clock P.M.

President Peary in the chair.

The following persons, recommended by the Council, were elected Fellows:

Glen E. Balch.
Alfred Crane.
Andrew F. Derr.
Horace M. Bellows.
Selmar Hess.
Mrs. Frederick F. Thompson.
Arthur C. Bradley.
George Herbert Beaman.
Arthur B. Emmons.
Dr. Herman Knapp.
James Roosevelt Lathrop.
George A. Strong.
Henry Spencer Blackmore.
Emil S. Levi.
E. A. Hitchcock.
Henry Stockbridge.
E. T. Bragaw.
Stephen Bonsal.
Anson Phelps Stokes.
S. M. Dix.
Joseph Holland.
W. Nephew King.
F. Robert Mager.
A. L. A. Himmelwright.
William E. Chancellor.
W. B. Lawrence.
J. H. Mergentine.
Joseph G. Myers.
Charles C. Mellor.
Charles E. Sampson.
Temple Bowdoin.
S. Bookman.
Louis Haupt.
Henry B. Bigelow.
John B. Jackson.
William Travers Gray.
Henry Cabot Lodge.
G. M. Laughlin.
Horace H. Fritz.
Clement Brown.
Alfred H. Brooks.
Thomas M. Carnegie.
John Bassett Moore.
Mrs. Charles C. Beaman.
John B. Marcou.
Robert N. Kenyon.
Hyman Starr.
Dwight Braman.
Robert G. Eccles.
Arthur M. Edwards.
Charles Henry Fish.
Frederick G. Agens.
William T. Meredith.
J. Jungmann.
Louis V. Holzmaister.

The President then introduced Mr. Alfred H. Brooks, who addressed the Society on the Geography and Resources of Alaska.

Stereopticon views were shown.

On motion, the Society adjourned.

The Fiftieth Anniversary of the Incorporation of the Society was commemorated by a dinner at Delmonico's restaurant on the 21st of December, 1904.

The proceedings at the dinner are recorded in this Bulletin, pp. 22–26.

AMERICA.

THE ASSOCIATION OF AMERICAN GEOGRAPHERS.—This Association was organized at a meeting in Philadelphia on Thursday, Dec. 29. The meeting was held in the University of Pennsylvania. The constitution adopted specifies as the objects of the Association,

> the cultivation of the scientific study of geography in all its branches, especially by promoting acquaintance, intercourse and discussion among its members, by encouraging and aiding geographical exploration and research, by assisting the publication of geographical essays, by developing better conditions for the study of geography in schools, colleges, and universities, and by co-operating with other Societies in the development of an intelligent interest in geography among the people of North America.

The membership is limited to persons who have done original work in some branch of geography. The following officers were elected for the first year:

President, W. M. Davis; Vice-Presidents, G. K. Gilbert and A. Heilprin; Secretary and Treasurer, A. P. Brigham; Councillors, Cyrus C. Adams, H. C. Cowles and R. S. Tarr.

After the organization was completed, about twenty papers were read by members, including W. M. Davis, A. P. Brigham, Bailey Willis, R. S. Tarr, R. E. Dodge, E. Huntington, H. C. Cowles and others.

The Association starts with a membership of about fifty working geographers of North America. The departments of physiography, exploration, meteorology, oceanography, biology (including zoological distribution and anthropogeography), and educational and historical geography are thus far included. It is not intended that the Association shall merely add another to the list of geographical societies; it is believed that the geographers of North America, through such an organization as this, which will facilitate their acquaintance and intercourse and thus make mutual co-operation more convenient and feasible, should become a very helpful influence in behalf of the geographical interests of the continent. Practical efforts looking towards the provision of more accurate and effective "Helps for Teachers of Geography," the improvement of map-making and other phases of work, were suggested. A programme on these lines of effort will require hard work, but there is no doubt that the Association will be very useful and successful if it is able to stimulate interest and to organize effort in behalf of a better understanding of geography among the people of the continent.

GLACIAL AND POST-GLACIAL HISTORY OF THE HUDSON-CHAMPLAIN VALLEYS.—In recent numbers of the *Journal of Geology* (Vol. XII, 1904, pp. 415–469 and 617–660), Prof. C. E. Peet presents a detailed statement of observation and interpretations relating to the glacial and immediately post-glacial history of the Hudson-Champlain valleys. Many local features are described and their interpretation discussed. These features include the several moraines, kame areas, deltas, lake clays, and marine deposits. It is a large area and a large subject and much painstaking work will be needed all the way from New York City to the St. Lawrence before its detailed history can be satisfactorily worked out. This is the first elaborate attempt at a broad discussion of the general features; and, considering the size and intricacy of the problem, Prof. Peet has done an exceedingly creditable piece of work. It abounds in local details to such an extent that it does not seem wise to attempt an abstract, but merely to call attention to the existence of the paper. R. S. T.

DESCRIPTIONS OF MARYLAND.—The Johns Hopkins University Studies (series XXII, No. 11–12) gather together brief descriptions of Maryland, found in the works of travellers and in guide books, with references to a chronological bibliography of these sources filling 58 pages. An index of authors concludes the work. No claim for completeness is made for the list of books, but it should prove useful to those interested in the State's history and to students of local conditions, manners, and customs.

U. S. NAVAL WIRELESS TELEGRAPH SERVICE.—The Pilot Chart of the North Atlantic for December announces that the facilities of the naval coastwise wireless telegraph stations, where not in competition with private wireless stations, are placed at the service of the public, and particularly of maritime interests, for the purpose of reporting vessels, maritime casualties, and derelicts at sea, for receiving private or commercial telegrams from ships at sea for further transmission by wire, and for sending wireless telegrams to ships at sea. For the present this service will be rendered free, but all messages will be subject to the tariffs of the ship stations and land lines. The Government now has 11 wireless stations on the Atlantic coast, 2 on the Pacific coast, and stations also at San Juan, Porto Rico, and Culebra, W. I. It is expected in a few weeks to have 4 more stations on the Atlantic coast, 1 on the Pacific coast, 2 in Porto Rico, 1 at Guantanamo, Cuba, and 1 in the Panama Canal zone.

SNOW AND RAILROADS IN THE SIERRA NEVADA.—In the BULLETIN for June, 1903, pp. 269–270, mention was made of the climatic difficulties met with in the construction and operation of railroads in different parts of the world. As a supplement to those notes, reference may here be made to a recent article in the *Scientific American*, in which emphasis is laid on the great hindrance to railroad operation resulting from the deep winter snows in the Sierra Nevada Mountains and to the various devices by which human ingenuity has endeavoured to overcome the obstacles which nature has put in man's way.

The snowsheds on the Central Pacific Railroad were first built with steel roofs, and in sections, somewhat similar to those of an ordinary house, but it was found that the unbalanced weight of the snow on one side or the other caused continual trouble by throwing the sheds out of line downhill. The sheds were next anchored back to the side of the hill with heavy rods attached to the framework of the shed, and secured to the rock or earth of the cut. It was then found that the snow melted from beneath the rods, and on the adjacent ground and roof of the shed, so that the entire mass for many feet in depth would hang upon the rods, bending them down, and pulling the sheds toward the bank, throwing them out of line in a direction opposite to that which occurred when there were no rods. A further development was the extension of the roof, where practicable, into the adjacent banks, forming a shed which prevented the wedge of snow from piling in between the building and the bank. The success of this form of shed suggested the present typical shape, which has a flat roof, the top of the shed being somewhat wider than the bottom, so that the melting wedge of snow falls away from the side of the shed instead of pressing against it, and so that the weight upon the base is increased, to prevent overturning. This form of roof naturally came closer to the stacks of the engines and increased the liability from fire in the dry season. Deflectors are therefore attached to the smokestack, and these throw the sparks to the sides, instead of straight up against the roof.

On the Central Pacific Railroad there are thirty miles of continuous snowsheds which, with others in isolated spots, bring the total up to about thirty-three miles. Near the summit of the Sierra Nevada, in addition to snowdrifts, there are avalanches containing rocks, trees, etc., which are carried along with the sliding snow. Against these the snowplough is of no avail, and it therefore seems impracticable to dispense with the snowsheds in this section of the country, in which the snow lies upon the ground in some years from November till June. The stretch of road subject to such conditions covers a distance of thirty-three miles, lying about equally on each side of a station at the summit of the Sierra Nevada Mountains on the Central Pacific Railroad. To guard against fires, a system of watchmen, connected with one another and with various intermediate points by telephone, and an alarm signal system, have been devised. Watchmen are stationed day and night at seven lookout stations. From one of these nearly the entire line of sheds is visible. Three fire trains (and a fourth during the driest part of the summer) always have steam up and crews at hand. Each train consists of a locomotive, fire-fighting brigade, and water cars, which can reach any point within a very few minutes and extinguish a fire without much difficulty. During a recent summer, the total loss through fire was not over $100; but occasionally the fire gets under way and destroys some miles of shed before it can be stopped. In such cases, the only effectual way to stop a fire is to tear down a gap of from fifty to one hundred feet in length. This prevents the remainder of the shed from acting as a chimney and drawing the flame along, as it does when uninterrupted, with great velocity, the heat being so intense that it destroys not only the rails, but the ties buried in the ballast.

The recurrence of these fires, with the resulting loss of property and delay to traffic, suggested the idea, on the Southern Pacific Railroad, of having gaps at intervals along the line which can be closed before the winter storms set in. The gaps or telescopic sheds consist of sections 50 feet long, and sometimes two sections 50 feet long, of movable sheds running on wheels on a track having a gauge of 16 feet 8 inches, the roads being supported on sills outside the ballast line of the main track. These telescoping pieces are arranged to run inside a section at one or both ends of the gap, built larger for that purpose. During the winter, the sections are closed, and the shed is then continuous and of practically the usual construction. As soon as the snow has ceased falling for the winter, the braces are removed and the telescopic shed is slid into the adjacent large section. These movable or telescopic sheds are intended to be placed at distances of from 2,000 feet to a half-mile apart in places favourable to their location. The Southern Pacific Company now has some sixteen of these telescopic snowshed sections, and so far they have proved successful in stopping the progress of large fires. R. DEC. W.

MOUNTAIN BREEZES IN KERN COUNTY, CALIFORNIA.—In the October issue of *Climate and Crops: California Section*, the voluntary observer at Isabella, in Kern County, Southern California, notes the occurrence of descending mountain winds at night, and the effect of these winds upon vegetation. A rapid descent of air, as in the *foehn* or *chinook*, usually brings a rise of temperature, and this is also the case with winds which blow with considerable velocity down mountain sides and valley bottoms at night. On the other hand, if such currents descend slowly, they are cooled by radiation and conduction to the cold ground more than they are warmed adiabatically. Hence they come down as cool breezes. In the case referred to in California, it is obvious that the descent is rapid, for the account says that these winds have "sufficient force to give a temperature in clear weather during winter 11° warmer" at Isabella than at a neighbouring station, Visalia. The observer notes that he has a vine on his porch which has remained green summer and winter for many years, but that the descending wind fails to reach Visalia, and from there on to Tulare Lake there are heavy frosts in winter. R. DEC. W.

More Men than Women.—The proportion of the sexes in the United States is discussed in Bulletin 14 of the Bureau of the Census. It says that in the continental United States there are 1,638,321 more males than females, or about 2 in every 100 persons. The relative excess of males here is greater than the average for all countries. Europe has an excess of females. Every other continent, so far as known, had an excess of males. Probably in the whole world, and certainly in that half of it which has been counted, with distinction of sex, there are several million more males than females. As a rule, sparsely-settled regions have an excess of males and densely-settled regions an excess of females. American cities as a rule have more females than males. In the 1861 cities, each having in 1900 at least 2,500 inhabitants, there were 201,959 more females than males, although many Western cities contain more males than females. The fact that the cities of the eastern United States and western Europe have an excess of females is due mainly to the greater opportunity for women to find employment in those cities. Notwithstanding the great excess of males in the total population of the United States, there are two periods of life when the reported number of females is greater. One, extending from about 83 years of age to the end of life, is probably due mainly to the longer average life of women; the other, from 16 to 25, is perhaps apparent rather than real, and due mainly to the greater number of women who claim erroneously to belong to this age.

The Sierra Madre, Mexico.—Dr. O. C. Farrington prints in the Field Columbian Museum Publication No. 89, 1904, some interesting observations made in the Sierra Madre, west of Durango, in 1896. The region, though possessing a climate which is not especially unfavourable, is so rugged in topography that it is practically uninhabited. Although seven railroads have western terminals north of the Isthmus of Tehuantepec, not one has crossed the Sierra Madre to the west coast. Of course the topographic barriers are not so great as absolutely to prevent railroad construction, but added to the ruggedness is the fact that absence of good harbours and the very narrow strip of low land along the west coast do not invite the building of roads. That the unfavourable condition affected savage as well as civilized man is indicated by the fact that Lumholtz has searched unsuccessfully for traces of a former population in this region. It contains some resources, especially forests and minerals, but the exact extent of the latter is as yet unknown because of lack of exploration.

Farrington describes the Cerro de Mercado, or Iron Mountain, at Durango, and gives some interesting points regarding the geology and physiography of the section traversed. One of the most striking topographic features observed was the Ciudad de Rocas, or City of Rocks, a peculiar erosional form resembling the erosion in the Bad Lands. Instead, however, of pinnacles, peaks, ridges, and angular outlines, the sculptured rocks were domed and rounded. There is a marked absence of joint planes in the homogeneous rhyolite and almost no talus at the base of the domes, so that the forms are wholly those of rock sculpturing in rock of remarkably uniform texture. There are occasional other horizontal beds of weaker rock, whose more rapid weathering introduces some irregularity into the general dome structure.

R. S. T.

AFRICA,

Progress in the Anglo-Egyptian Sudan.—Not five years have elapsed since the Mahdist rule in the Egyptian Sudan was overthrown and the rebuilding of Khartum, the old capital, was taken in hand. Its site was then only a labyrinth of tumbled ruins, of mud houses and huts. The London *Times* reports that great progress has been made in rebuilding the city. Practically the whole river front is now occupied by buildings. The large palace is the central feature, and near it are the spacious Government offices. Along the river front are workshops, a hospital, a fine hotel, residences standing in pretty gardens, the Gordon College, and the cool and comfortable barracks of the British regiment. It was thought at one time that the native population of Omdurman, the capital of the Mahdists, would follow the official class across the river to Khartum. There are now about 50,000 of them in Omdurman, but they are very happy where they are, and it is realized that it is better for them to remain in their present home.

The building of a railroad to connect Khartum with the Red Sea has begun from both ends. About thirty miles of track have been laid from the Atbara River, and work is in full swing from the Red Sea port of Suakin. The distance by steam transport between the Mediterranean and Khartum is 1,500 miles, of which 1,300 miles are by rail and 200 by water. When the railroad is finished between Suakin and the confluence of the Atbara with the Nile, 470 miles of steam routes will connect Khartum with the sea. This will greatly reduce the cost of transportation between the Mediterranean and Khartum and the Upper Nile.

ERITREA'S NEW CAPITAL.—The Government offices of the Italian colony of Eritrea have long been centred at Massowa on the Red Sea. They are now to be removed to the high plateau of the hinterland on account of the very trying climatic conditions at Massowa. The Government has adopted the suggestion of Mr. Ferdinand Martini, Governor of the colony since 1897, to transfer the capital to Asmara, sixty miles in the interior and forty-two miles from Macatat, the present inland terminus of the railroad. In 1897, when the Italians first occupied Asmara, it contained only a few scores of huts and an Abyssinian fort. The town now has a population of 9,000, including about 1,000 Europeans, all Italians excepting a few Greeks and some Norwegian missionaries. It has some aspects of European towns, with a few superior dwellings, cafés, a theatre, a casino, a hotel, a post office, and handsome public and private gardens. It is situated only a mile and a half from the edge of the plateau, is in the midst of splendid pastures, and around it flourish many varieties of trees and some European crops.

None of the typical tropical diseases has a foothold in Asmara, which is 7,800 feet above the sea, with a maximum temperature of 88° F., and a minimum of about 14°. The town is reached from the end of the railroad by a remarkable wagon road built by the Italians in 1900–01. The road is 42 miles long, winds from terrace to terrace, through deep cuts and numerous tunnels, is wide enough for wagons to pass one another, and is rendered safe at its outer edge by a barrier of timbers. Stages run over the road, the fare to Asmara being $5. Italy expects ultimately to extend the railroad to Asmara, but, as the cost will be enormous, the enterprise may not be carried out for years.—(*À Trávers Le Monde*, Nov. 26, 1904.)

AÏN SEFRA DESTROYED BY A FLOOD.—The *Bulletin* of the Comité de L'Afrique Française (No. 11, 1904), says that on Oct. 21 the village of Aïn Sefra, in southern Algeria on the edge of the Sahara, was suddenly overwhelmed by torrents which swept down two wadys. The flood was due to heavy rain that had fallen on the slope of a neighbouring mountain range. The inhabitants had no time to escape the rush of waters. Ten Europeans and fifteen natives were drowned in spite of the heroic efforts of the officers and soldiers of the garrison to save life. Among the victims was Mrs. Isabelle Eberhardt, a writer of reputation, who was collecting material for a work concerning family life among the Mohammedans. It is surprising that the loss of life was not greater, for only about a dozen of the 200 or 300 houses in the village remained. The flood subsided in about ten minutes after reaching the town.

This disaster recalls another of the same kind which occurred in the Algerian Sahara on the evening of April 12, 1899, near Berrian, 300 miles south of the City of Algiers. A force of 90 French soldiers had camped in the usually dry bed of the Wady Urirlu. The stony bed of the Wady is depressed only a few inches below the flat surface of the region. A cloud-burst occurred among the hills to the west, and a few minutes after an alarm was raised an area about three-fifths of a mile across was under six feet of water. Most of the soldiers reached neighbouring hillocks, but the bodies of six of them were found next day several miles below the spot where camp had been pitched.—(BULLETIN, 1899, p. 375.)

These catastrophes show that although rains are comparatively rare in the Sahara, local storms with heavy precipitation sometimes occur, causing floods that bring disaster.

NEW AFRICAN EXPEDITION.—Major Powell Cotton left London for Khartum in November for another expedition in Africa. The object of the journey, which it is expected will occupy about eighteen months, is the exploration of the vast region lying between the Nile and the Zambezi. The expedition will go up the White Nile to Lado, and then strike south through the East side of the great forest, probably visiting the western slopes of Ruwenzori. After investigating the forest and the district to the west of Lake Kivu, the region to the west of Tanganyika will be traversed, and the expedition will then proceed south toward Katanga. Eventually, Major Cotton hopes to come out in British territory in Nyasaland, whence he will travel to the coast by the Zambezi. Every facility will be given to Major Cotton by the Belgian Government, and he will traverse the entire length of the Congo State. Among the special objects of the expedition are the study of the great mammals of the forest region, and also the native tribes, especially the pygmies. A considerable part of the region to be traversed is quite unknown, so it may be hoped that the expedition will make additions to geographical knowledge.

FOUREAU'S MAP OF HIS TRANS-SAHARAN JOURNEY.—The Foureau-Lamy expedition between Algeria and the Congo, in 1898–1900, was the largest scientific party that has crossed the Sahara. Since his return to France, Mr. Foureau has been collating the geographical material he collected, and has produced a fine map, in 16 sheets, which has now been published by the Société de Géographie in the form of an atlas. Twelve sheets, showing the itinerary of the mission from Wargla in the Algerian Sahara to Bangui in the French Congo, on the Ubangi river, are on the scale of 1:400,000, or 6.3 statute miles to an inch. The remaining four sheets are given to a detailed survey of the course at low water of the Shari, between Fort Lamy and Fort Archambault, on a scale of 1:100,000, or 1.5 statute miles to an inch. As all the surveys of this expedition were made with the best instruments and by the most scientific methods, the map gives an accurate idea of the topography along the entire route. The projection adopted was the modified Flamsteed, the central meridian being 10° east of Paris, which nearly coincides with the mean axis of the itinerary. In the margin of each sheet are insets and plans of the most interesting points. This map will be one of the bases for the construction of a detailed map of the Sahara, materials for which the French are now collecting.

FULANI RULERS IN NORTHERN NIGERIA.—Since the occupancy of Sokoto and Kano by the British, the newspapers have frequently spoken of "the downfall of Fulani rule." Major J. A. Burdon, Resident of the Sokoto Province, says in the *Geographical Journal* (Dec. 1904) that though this is true, inasmuch as the Fulani Emirs now have to acknowledge a superior, the expression is misleading. The Fulani Emirs still rule, collect taxes and administer justice. The people have to obey their old rulers, and therefore it cannot be said that the Emirates have fallen. What has happened is that a Suzerain power now guides the rulers, and above them is a supreme court of appeal. The Fulani States, therefore, have not ceased to exist, but have become self-governed portions of a great empire. The feeling of many of the population is one of gratitude, because the peace established by the British has enabled them to return to their long desolate homes, and has freed traders from pillage and extortion. This feeling pervades individuals and individual communities, and will increase till it permeates the whole country. No doubt, however, there is still among many an underlying feeling of resentment. The aim of the British administration is to rule through the existing chiefs and to enlist them on their side in the work of progress and good government.

TRAVEL IN LIBERIA.—The October number of the Monthly Consular Reports contains interesting material on Liberia. Minister Lyon at Monrovia says that beside there being no railroads to further travel, there are no roads for vehicles of any kind, leading into the interior. Beasts for transport are very rare. Human porters are the most serviceable, even for human freight. The traveller is swung in a hammock suspended from a horizontal bar laid across the shoulders of two natives, who rush at break-neck speed through narrow, uneven paths, over dangerous ravines and huge logs which block the way. Except the soldiers and the traders, the coast Liberians are absolutely ignorant of their country. Roads are crooked and even labyrinthine, made so to mislead the enemy in tribal wars. A native never clears paths. If trees fall across them he goes around or climbs over. Bridges are almost unknown, because the natives prefer to swim the streams. Even the more important inland commercial centres are only approached over such roads. It seems strange that neither the State nor foreign enterprise is building roads, to lay the foundations for Liberia's commercial development and secure the perpetuation of her independence. On account of the lack of roads to the coast, the trade is being drawn off northward through French territory. Besides the ordinary climatic and physiographic difficulties in the way of these improvements, the natives themselves are often engaged in inter-tribal warfare, and they object to having roads built to their towns, because a road opens the way for attack.

Minister Lyon also discusses the natives—the Kroomen, the civilized coast negroes, and the barbarians of the interior. He notes their occupations—agriculture, grazing, lumbering and mining, and their resources—good soils, excellent tropical climate, extensive forests, numerous native plants of value, and a considerable variety of minerals. He considers currency, exports, imports, elements of trade and banking; then points out opportunities for growth of trade and obstacles in the way, including laws and regulations. He comes to the conclusion that Liberia is a country of notable natural resources in many lines, and that the greatest obstacles to her development are internal. More complete control of the natives, more stable government, and insured protection, modification of laws relating to foreign occupation, industry and labor, and the making of roads are among the present positive demands for the substructure of national development. G. D. H.

OSCILLATIONS IN THE LEVEL OF VICTORIA NYANZA.—As in all inland bodies of water the level of Victoria Nyanza varies from time to time with more or less regularity. Capt. H. G. Lyons, director of the General Survey Department of Egypt, has just reported the facts thus far ascertained ("On the Variations of Level of Lake Victoria," Cairo, 1904). The annual oscillation of the lake level varies between 1 and 3 feet, while the absolute range during the last seven years has been 3 feet 9 inches.

THE CENSUS OF BRITISH SOUTH AFRICA.—The results of the census of the various South African Colonies carried out early this year have been presented to Parliament. The general totals for the respective colonies and protectorates are as follows:

	WHITES.	COLOURED.	TOTAL.
Cape Colony	580,380	1,825,172	2,405,552
Transvaal and Swaziland	300,225	1,053,975	1,354,200
Orange River Colony	143,419	241,626	385,045
Southern Rhodesia	12,623	—	—
Natal	97,109	187,582*	284,691*

* Exclusive of native areas.

ASIA.

EXPEDITION TO INNER ASIA.—Mr. Robert L. Barrett has planned an expedition to Central Asia which will occupy about two years. He will defray the entire cost of the enterprise, and Mr. Ellsworth Huntington, already known for his remarkable journey through the great cañon of the Euphrates River and his geographical work in Persia, will share his labours. They expect to reach India about the end of February. From Bombay they will go directly north to Kashmir, where they expect to spend two or three months in studying the southern tribes of the Himalayas, giving special attention to evidences of recent glaciation, or other climatic changes. As soon as possible they will enter the high mountains, crossing the Indus at Leh, and entering the great plateau of western Tibet. After gaining some idea of its structure, they will descend into Chinese Turkistan on the north, and will spend there the remainder of the season of 1905.

The chief points of study will be the history of the basins of Central Asia during recent geologic times, and the changes which have taken place since the occupation of the country by man.

During the winter of 1905-6 the explorers will live for two or three months in Kashgar, and expect then to travel along the northern border of Chinese Turkistan to the Turfan depression, Lop Nor, and Kuku Nor. Thence they will proceed southward to the sea, if time allows and circumstances permit; otherwise they will travel east through China to Peking.

In addition to physiographic studies, in which Mr. Barrett is chiefly interested, Mr. Huntington will undertake investigations of the relation of physiography to life, and especially to human life and history. The expedition is under the auspices of the Association of American Geographers.

AUSTRALIA.

NEWSPAPER WEATHER MAP IN AUSTRALIA.—It has for some time been the practice of a few daily newspapers in Europe and in the United States to print reduced copies of the daily weather maps. This practice, which is an excellent one, brings before a large number of persons the most important facts shown on the full-size chart, but so far few newspapers have been willing to give up the space needed for the map. It is encouraging to receive a copy of the Sydney (New South Wales) *Daily Telegraph* of October 12, 1904, which contains the first daily weather map ever published in an Australian newspaper. The map shows isobars, winds and rainfall; is prepared from information furnished by Mr. H. A. Hunt, Acting Meteorologist of the State, and is to be published daily at the request of many correspondents of the paper, especially of many school teachers. Meteorology has recently been incorporated into the school course in New South Wales. R. DEC. W.

EUROPE.

A BIOLOGICAL STATION ON THE MURMAN COAST.—The *Zeitschrift* of the Berlin Geographical Society (No. 8, 1904) says that a biological station has been established on the Murman coast, the northern shore of the large Kola Peninsula. The station is not far from the port of Alexandrovsk. The purpose is to study all the conditions of the Arctic Ocean in that neighbourhood, and especially its forms of life. A sailing vessel connected with the station is fitted with the best appliances for making collections of sea life. A large aquarium has also been provided for the purpose of studying marine animals that can be kept alive in it. The research work, last summer, resulted in a very large and rich variety of material for study. An enormous number of specimens were dredged from the sea floor, among which were many interesting forms of crustacea, medusæ, sea anemones, and others forms of life.

FOGS IN LONDON.—At the November meeting of the Royal Meteorological Society, in London, Mr. F. J. Brodie, who has of late years given special attention to the study of London fogs, read a paper on the *Decrease of Fog in London during Recent Years.* Mr. Brodie has tabulated the number of days with fog reported at Brixton, the London station of the Meteorological Office, for the 33 years 1871–1903, and found that the mean annual number of fog days was 55, of which 45 occurred in the winter half-year and only 10 in the summer half-year. December was the foggiest month, with 9.5 days; the next being November, with 8.5; January, with 8.2, and October, with 7.8. The clearest months were July, with 0.4; June, with 0.6, and May, with 0.8. The greatest number of foggy days was 86, in 1886, and 83, in 1887; and the least was 13, in 1900, and 26, in 1903. Dividing the 33 years into three periods of 11 years each, the author showed that the mean for 1871–1881 was 55; for 1882–1892 it was 69, while for 1893–1903 it was only 41. There seems, therefore, to have been a very marked decrease in the number of days with fog during the last 11 years. R. DEC. W.

THE VALUE OF ACCURATE RAINFALL RECORDS.—The following quotation from the London *Daily Mail* for November 30th last illustrates the value of accurate rainfall data in the affairs of everyday life. The paragraph is headed *Dispute about a Rainfall:*

> The question of rainfall at Paignton last Whit-Monday was the cause of a dispute which was decided at Totnes County Court yesterday, when the committee which arranged the Paignton gala and sports sued an insurance company for £36 15s. They effected an insurance with Lloyd's, the understanding being that if more than .08 in. of rain fell between nine in the morning and four o'clock in the afternoon they would receive the difference between the gate receipts and £100. The plaintiff, who took the gauge with a pencil and an ordinary rule, measured an eighth of an inch. The defendants doubted the possibility of such a heavy fall, as at Torquay, two miles away, only a hundredth of an inch was recorded. The jury gave a verdict for the plaintiffs, and the Judge said that although the committee had adopted antiquated methods, the defendants made no effort to take the gauge themselves.

R. DEC. W.

ARCTIC.

AMUNDSEN'S NORTH MAGNETIC POLE EXPEDITION.—The Norwegian Expedition which started for the region of the north magnetic pole early in the summer of 1903 left a letter, dated Aug. 27, 1903, on Beechey Island (or rather peninsula), which was found in October last by the crew of the American whaler *Vesuvius*. The letter said that the expedition would pass its first winter on the way to the magnetic pole somewhere in Lancaster Sound, and the second winter (1904–05) in Peel Sound, as near as possible to the magnetic pole. Peel Sound, the narrow strait which separates North Somerset from Prince of Wales Land, was visited by J. C. Ross, Penny, and Austin (1849–51) during the Franklin search.

ECONOMIC GEOGRAPHY.

COMMERCIAL CHINA IN 1904.—During the past year the Bureau of Statistics in the Department of Commerce and Labor brought out monographs on China, Korea, Russia, and Japan. The information is taken from the Monthly Summary of Commerce and Finance for January and for February, 1904.

In the paper devoted to China a coloured map shows the political divisions, railways, constructed and projected, the internal waterways, telegraphs and cable lines and some of the ocean trade routes ; also the ports of foreign control and the Treaty ports. The map does not show as many Treaty ports as the text, and both are a few ports behind the real number. The map gives 32, while the statistical table gives 33. The discussion of the Treaty ports in the text is clear and instructive. That of waterways and internal communications is full of information. The paragraphs on industries show the fact and the causes of the rapid development of manufacturing in China. The currency occupies over twenty paragraphs. Statistics of commerce, shipping, growth of trade, population, etc., occupy about one-third of the 110 quarto pages. China's awakening is made apparent to the reader ; when the projected railroads are in operation it will be felt in China. G. D. H.

COMMERCIAL KOREA IN 1904.—Two maps of Korea and vicinity introduce the monograph, but are unsatisfactory. The course of the proposed railroad across the Empire, both north and south and east and west, with its finished section from the port to the capital, is shown; but the shore-line, a few towns and the streams are all of the geographic features which appear. The Treaty ports are eight in number, two or three of which are on the proposed railroad, and thus will be in steam communication with the Siberian road at the mouth of the Yalu River. The south end of the road at Fusan is at the nearest point to Japan. Owing to the mountainous topography and short, steep courses of the streams, water transportation is very poor. Road-making has received no attention in Korea. The commercial possibilities of the Yalu are discussed. Korea's exports are raw materials, such as minerals, grains, cattle, and some products of the sea. The food of the people and their occupations receive treatment. Tables give the analysis of the commerce, its chief items, amounts, and participants. G. D. H.

COMMERCIAL RUSSIA IN 1904.—While all eyes are turned to the war in the Far East the business world finds the war only an episode in the evolution of commercial life and relations in the Orient. The strides made by Russia in ten years in currency and banking regulations, railway construction, manufacturing other than in the village homes, and the uncovering of mineral wealth, are described and partially explained in the monograph. The Siberian railway, shown on a large map of trade routes, is discussed in its many phases of usefulness. Among the conclusions are the following:

(*a*) The Siberian railway facilitates Siberian immigration, and a more rapid improvement of the great agricultural possibilities of the land traversed.

(*b*) Affords an outlet, both West and East, for the agricultural products, lumber, furs and mineral products.

(*c*) Will serve as a directive line for the industrial expansion of Russia already begun.

(*d*) Shortens the distance along Russia's great Siberian arm to her Eastern finger-tips by many weeks of travel, thus unifying the great, unwieldy, extended Empire.

(*e*) Forms a connecting link in the world's Northern commercial girdle. Of course Russia is to profit immensely by her position on this monopolizing trade route.

The agricultural condition, possibilities and outlook are discussed; many other industries, as furring, lumbering, commerce, and animal husbandry, are similarly treated. Notes and tables of special interest to manufacturers, merchants and commercial men are common, while statistics of the various industries, exports, imports, customs and transport tariffs, population, cities and finance make a valuable compendium. G. D. H.

COMMERCIAL JAPAN IN 1904.—Japan and its relation to the territory bordering on the Pacific Ocean is the title of the map. Comparison of this with a good physical map of the Empire brings out the geographic reasons for the distribution of tea and rice-growing. The next treatment is semi-historical, beginning with a brief statement of the earlier commercial relations and then taking up the present conditions. Japan's reliance upon the United States for certain commodities, notably cotton, illuminating oil and iron and steel, is shown to be mainly due to geographic conditions, while her exports to America, especially silk, tea, matting, bamboo and lacquered ware, are commodities which we are unable to produce. A trade thus based on geographic differences must be fairly enduring and mutually beneficial.

Foreigners in Japan, to the number of 11,684, are mostly classed as merchants and men of other professions. Of the Japanese in other lands 72 per cent., or 90,146, reside in the United States, and about 30,000 more are in Oriental lands, Korea, China, Russian and English colonies. Thus a very small per cent. of the Japanese with foreign residence are in Western countries other than the United States. Both the export and import business of Japan are conducted largely by resident foreigners. A good article, treating of the effects of Japan's commercial development on her civilization, and prepared by a Japanese student in America, will be read with interest. The monograph discusses the more important trades and industries as to their present condition and prospects. Elaborate statistical tables of actual conditions and comparative growth in production and commerce constitute at least one-third of the publication. G. D. H.

OCEANOGRAPHY.

BULLETIN OF THE OCEANOGRAPHICAL MUSEUM OF MONACO.—The Prince of Monaco has begun the publication of a *Bulletin* as the special organ of the Oceanographical Museum which he has founded at Monaco. It will print the results of special investigations conducted at the Museum, of research expeditions carried out by the Prince, and general papers relating to oceanography. It will not appear regularly, but will be published whenever a memoir is prepared, each number having its own pagination. The language is French, with an occasional summary in Esperanto, the artificial tongue whose acceptance both as an international and scientific language its friends are now urging. It remains to be seen how far the initiative of the Prince will promote this effort. Nineteen numbers of the *Bulletin* were printed between January 1 and October 15 last year.

THE GUINEA CURRENT.—In 1895 the Royal Meteorological Institute of the Netherlands published an atlas under the title of "De Guinea en Equatoriaal Stroomen" (The Guinea and Equatorial Currents) in which were recorded the meteorological and oceanographic observations made by the Dutch in the domain of these currents from 1855 to 1890. A second edition has just been issued extending the results of these observations to 1900 and augmenting the area studied by 3° of latitude and 13° of longitude. A supplementary volume contains explanatory text and tables giving the mean monthly rate of current, force and direction of wind, and also the temperature, barometric pressure, and other data for each area whose sides are meridians and parallels 1° in length. The information on the charts is very clearly expressed, and the work will be of value to the mariner as well as to the oceanographer and meteorologist.

GENERAL.

PROFESSOR PENCK'S LECTURES IN THIS COUNTRY.—Professor Albrecht Penck, before returning to his duties in the University of Vienna, gave a course of lectures at the Lowell Institute, Boston, on "Selected Chapters in Physiography." This course was followed, in the latter part of November, by three lectures before the Harvard Geological Conference on the "Alps in the Great Ice Age." The first lecture related to Climatic Variations of the Ice Age, the second to Glacial Sculpture of the Alps, and the third to Man and the Ice Age. The chief results reported in the monograph "Die Alpen in Eiszeitalter," which Professors Penck and Brückner have written, were presented in these lectures. Just before sailing Prof. Penck gave a very interesting lecture before the section of Geology and Mineralogy of the New York Academy of Sciences, on December 2, on "The Surface Features of the Alps."

GEOGRAPHY AT THE COLLEGES AND UNIVERSITIES OF THE UNITED KINGDOM.—It is a pleasure to find from the last number of the *Geographical Teacher* (London) that geography is now recognized in more than a casual way in at least thirteen of the colleges of the United Kingdom, though there are eight colleges in which the subject still has no place. The work given at the different institutions includes all phases, but embraces more regional geography and history of geography than is usually the case in American courses. Political geography also receives much attention, but there is only one course in anthropogeography, a field that is too much neglected in all college and university work. R. E. D.

LANTERN LECTURES FOR THE BRITISH COLONIES.—The London *Times* (Nov. 25) says that, with the purpose of giving school children in the British colonies a better knowledge of the United Kingdom, the Colonial Office authorized a committee to draw up a syllabus of seven lectures on the United Kingdom, each to be illustrated by forty lantern-slides. The lectures are being prepared by Mr. H. J. Mackinder, who has the general superintendence of the scheme. They are intended for the higher classes in elementary schools, or, with modification, for adults. Each lecture will supply several hours' lessons, and will be a text for teaching and a guide as to the method of teaching. These lantern lectures will be introduced first into the Colonies of Ceylon, the Straits Settlements and Hongkong. The colonies will also supply material for similar lectures upon them to be used in Great Britain.

THE JOURNAL OF GEOGRAPHY.—Beginning with the number for January, 1905, Prof. Richard Elwood Dodge, of the Teachers College, Columbia University, New York City, assumes full responsibility for the editing and publishing of the *Journal of Geography*. The *Journal* will continue in its present form and character, and will deal with geographic education in elementary, secondary, and normal schools. All communications should be addressed to the editor at the address given above.

DR. GILBERT HONORED.—Dr. G. K. Gilbert, of the U. S. Geological Survey, has been elected a foreign member of the Accademia dei Lincei at Rome.

OBITUARY.

EDWARD STANFORD.—Mr. Edward Stanford, the well-known map publisher of London, died on Nov. 3 last in his seventy-eighth year. His interest in maps was first aroused in 1848. He produced in 1862 the most perfect map of London that had ever been issued, using as a basis a skeleton map showing only main roads on a scale of 12 inches to one mile. He employed surveyors to fill in details, and as fast as sheets came in from the surveyors they were engraved with infinite pains on steel plates. He published many other notable maps.

RICHARD KUND.—Major Richard Kund, who, with Lieut.-Tappenbeck, was engaged in the exploration of the Southern Cameroons (1888-90), died on July 31 last, at the age of fifty years.

NEW MAPS.

AMERICA.

UNITED STATES.—Geologic Atlas of the United States. No. 112. Bisbee Folio, Arizona, 1904.

The Bisbee quadrangle is in Cochise Co., in the southeastern part of Arizona and within the mountain region. It extends between Longitudes 109° 45′ and 110° W. and Latitudes 31° 30′ and 31° 20′, the latter being the Mexican boundary line; area about 170 square miles. The most striking topographical feature in the map is the sharp contrast between mountain and plain. The quadrangle owes its economic importance exclusively to the occurrence within it of ores of copper. The total output of copper to the close of 1902 was 380,047,210 pounds.

UNITED STATES.—Land classification map of Little Belt Mountains Quadrangle and part of Fort Benton Quadrangle, Montana. Scale, 1:250,000, or 3.7 statute miles to an inch. U. S. Geol. Survey, Washington, D. C., 1904.

A fine specimen of the maps by which the Government is illustrating the economic resources of the forest reserves and public lands of the West. Colours differentiate the forest areas according to the quantity of timber per acre, and show the grazing, agricultural, and unproductive areas. The map accompanies Professional Paper No. 30 on "Forest Conditions" in this region.

UNITED STATES.—Lincoln Forest Reserve, New Mexico. Scale, 1:348,000, or 5.4 statute miles to an inch. U. S. Geol. Survey, Washington, D. C., 1904.

Colours classify the land according to the quantity of timber, the burned timber